DOCUMENT RESUME

ED 421 162 IR 018 882

AUTHOR Maney, J. Kevin; Brooks, Douglas M.; Perry, Bruce E.
TITLE Using Telecommunity To Develop a K-16 Approach to Education Technology Adoption.
PUB DATE 1998-00-00
NOTE 6p.; In: "SITE 98: Society for Information Technology & Teacher Education International Conference (9th, Washington, DC, March 10-14, 1998). Proceedings"; see IR 018 794.
PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Uses in Education; *Cooperative Programs; *Educational Technology; Elementary Secondary Education; Higher Education; Instructional Design; *Partnerships in Education; *Professional Development; State Aid; *State Programs; *Teacher Education
IDENTIFIERS *Ohio; Technology Integration

ABSTRACT

In the state of Ohio, three current state technology initiatives, SchoolNet, SchoolNet Plus, and Telecommunity have been funded. It is critical that schools of education and K-12 schools collaborate to develop a K-16 approach to pre- and inservice teacher education in the area of educational technology. The Technology in Education Adoption Model (TEAM) recognizes the importance of this approach to professional development. This paper describes how one successful Ohio SchoolNet prototype, Partners in Learning, located in Oxford, Ohio, has developed a K-16 telecommunity to encourage the adoption of educational technology. In 1990, Partners in Learning was organized by Dr. Douglas Brooks of Miami University, as a community-wide leadership team. This prototype learning community features the application of integrated technologies to: (1) enhance learning systems design; (2) develop an extended learning community; and (3) enable full human resource development through life-long learning. Results of telecommunity development are discussed in terms of access, professional development, and curriculum development. In both the school districts involved, the intermediate level building emerged as the district leader in the full application of telecommunity and the following developmental stages have been identified in the process: installation and access equity; play and interpersonal use; building and district information; individual and team instruction; projects and initiatives management; and interorganizational communications. (AEF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 421 162

Using Telecommunity to Develop a K-16 Approach to Education Technology Adoption

By:

J. Kevin Maney
Douglas M. Brooks
Bruce E. Perry

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

G.H. Marks

TO THE EDUCATIONAL RESOURCES

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

ER018862

Using Telecommunity to Develop a K-16 Approach to Education Technology Adoption

J. Kevin Maney
Miami University, Ohio

Douglas M. Brooks
Miami University, Ohio

Bruce E. Perry
Miami University, Ohio

In the state of Ohio, three current state technology initiatives, SchoolNet, SchoolNet Plus, and Telecommunity have been funded. Combined, these three projects have dramatic implications for each other. The goal of SchoolNet is to provide network capacity for every K-12 classroom. The goal of SchoolNet Plus is to provide one computer workstation for every five students in grades K-4 while the goal of Ohio's Telecommunity initiative is to increase collaboration among schools and service providers to enrich the public school curriculum. The three programs represent a $700,000,000 commitment by the state and service providers to infuse technology into K-12 education and set the stage for cultural transformation of teaching and learning in Ohio. Moreover, if these initiatives are to enjoy widespread adoption throughout the state, it is critical that schools of education and K-12 schools collaborate to develop a K-16 approach to pre- and inservice teacher education in the area of educational technology. The Technology in Education Adoption Model (TEAM) recognizes the importance of this approach to professional development and this paper describes how one successful Ohio SchoolNet prototype, Partners In Learning, located in Oxford, Ohio, has developed a K-16 telecommunity to encourage the adoption of educational technology.

Restructured Learning

In 1990, *Partners in Learning* was organized by Dr. Douglas Brooks of Miami University, as a community-wide collaborative leadership team that included the Talawanda Local School District, Tri-Village Local School District, Miami University, the Oxford Chamber of Commerce, and communications companies, Warner Cable and GTE. The vision of *Partners in Learning* embraces the national goals of education, Ohio's vision for school renewal, and advances a "break-the-mold system" for high performance teaching and learning in extended learning communities. The goal has been to design and implement a prototype of a "near and distanced learning community" that would guide Ohio schools, communities, and universities into the 21st century. This prototype learning community features the application of integrated technologies to: (1) enhance learning systems design; (2) develop an extended learning community; and (3) enable full human resource development through life-long learning.

Partners In Learning/SchoolNet has been operational for 18 months and is now the first and best example in Ohio of how a telecommunity can stimulate and support a K-16 approach to educational technology adoption. Two hundred-eighty teachers and administrators in 15 buildings across two school districts and Miami University are in the early developmental stages of "near" and "distanced learning." Project teachers have "near distance" learning capacity using FirstClass telecommunications software as well as Internet access. Data collected during the first 18 months of use has provided critical insight on the natural maturity of near and distanced learning in classrooms. This data has been collected using questionnaires, journals, online surveys, and measures of use information retained by the network system software.

Results of Telecommunity Development

Infrastructure

The project infrastructure has performed with great reliability. Teachers and administrators have reported that reliable SchoolNet system operation has stimulated teacher access and use. Two category-five wires and two coaxial cables were installed in each classroom close to the teacher's workstation, conveniently located for easy access.

Access

The number and frequency of teacher and administrator logons have grown steadily over the 18 months of the project. The goal of the access phase of the project was to reduce to a minimum the number of mouse clicks and keystrokes necessary to access FirstClass telecommunications software or the Internet. Launchers were configured for all teachers' computer desktops to enable quick and easy access to telecommunications and other software. In

classrooms where the Launcher was not used, teacher use of telecommunications tended to decrease until the Launcher was reinstalled or activated. Morning logons to FirstClass were also stimulated by the presence of building and district news bulletins posted to its conferences by administrators and building secretaries. In addition, teachers who reported difficulty accessing the FirstClass telecommunications server were (and are) immediately provided with mentoring from another teacher and/or help from building technology support personnel which includes high school students organized into a "Tech Squad."

Professional Development

The professional development plan has been guided by a "Teacher Leader model" that emphasizes voluntary, personalized, and developmentally sensitive training and curriculum development. Teachers are encouraged to participate, but not required to do so. Two consecutive two-week summer "Playshops" have attracted over 60% of the project's 280 teachers who participated in team building and online simulations conducted over the FirstClass telecommunications network. High school students were hired to provide technical support during the summer "Playshops" and remain part of the "Tech Squad" during the academic year. The Tech Squad sets up and makes minor repairs on computers, solves problems through a "Help Desk" on FirstClass, documents teacher competence gains, and helps identify emerging technology needs. In fact, this systemic use of students to provide technical support has proven to be critical to the success of the project. The results of this past summer's telecommunity training have been spontaneous online mentoring, resource sharing, and content access from Miami University.

Telecommunity has also permitted dramatic advances in preservice teacher development. University and preservice teachers now have telecommunity support which has changed the structure of university mentoring during student teaching and dramatically extended the learning community available to preservice teachers. For example, in the computer module of EDT 343, Media and Technology For Teaching, all students are required to use *Conferencing on the Web*(COW) to ask SchoolNet teachers about teaching strategies related to using technology. Since COW is Web-based, students have had online conversations with teachers as far away as northwest Ohio, providing students with resources which otherwise would not be available to them. Whenever possible, student teachers are placed in technology-rich SchoolNet classrooms with the objective of further developing their ability to integrate technology into curriculum and instruction, skills which were introduced to them in the computer module of EDT 343. Using SchoolNet resources, telecommunities have developed between university supervisors, mentor teachers, and student teachers to enhance communications between all parties and advance student teachers' learning experiences and opportunities. Student teachers and their supervisors are also given regular opportunities to develop their teaching with technology skills on a per-request basis and to develop a Web presence by learning HTML and Web site design skills. As a result, students have learned new technologies like HyperStudio and developed personal home pages, online professional portfolios, and Web pages to support the respective classes they teach.

Curriculum Development

Talawanda City Schools and Tri-Village Local Schools are also collaborating districts in Ohio's *Schools On The Move* project. The goal of this project is to design a technology-supported curriculum that improves fourth and eighth grade proficiency test scores. These two districts, along with Miami University, were selected because their intact SchoolNet infrastructure could produce information on the impact of telecommunity-supported curriculum development. Unlike other participating schools, a Web site (at http://www2.eap.muohio.edu/SoM/) was developed by Dr. Kevin Maney of Miami University for constructing *Lesson Labs* that can be authored, edited, and shared across districts and teachers. Results to date suggest that more frequent, timely, and cost effective communications are occurring between project participants than in other areas of the state where the SchoolNet infrastructure has not been installed.

Summer SchoolNet "Playshops" have also been designed to provide authentic opportunities to improve current instructional activities and to extend curriculum design into more advanced technology-rich activities. Consistent with ACOT research (Sandholtz, Ringstaff, & Dwyer, 1997), teachers have sought first to improve their current practices and then pursue more advanced applications and activities that employ available technologies. Moreover, a curriculum bank developed in the "Playshops" is stored online and teachers have reported accessing this resource for ideas on how to integrate technology into their instruction. Perhaps most exciting is that these same teachers can use the "Chat" or simple e-mail features of FirstClass to contact the author of the curriculum idea for clarification and suggestions. In contrast, the chance of a classroom teacher contacting the author of a textbook is almost nonexistent. As teachers use these SchoolNet-based resources and engage in professional development opportunities to enhance their teaching with technology skills, they also become better able to mentor preservice teachers, both in person and online, who are learning to do the same in university environments. This is the component of teacher education programs that is usually missing, but which is critical to training preservice teachers to use technology as tools for learning (OTA, 1995).

Transformative Realities

Transformative outcomes in the *Partners in Learning* SchoolNet project have proven to be developmental. In both Talawanda and Tri-Village Schools, the intermediate level building emerged as the district leader in the full application of telecommunity and the following developmental stages have been identified in the process.

Installation and Access Equity Stage

This stage is characterized by computer availability and total faculty access to the FirstClass telecommunications server via their computer desktops. Teacher Leaders were predictably the first group to be interested and motivated to master access skills whereas non-users elected not to attend professional development opportunities or to contact building technical support to help them develop the skills needed (four key strokes) to access the network. The main reason cited by non-users for not using FirstClass as a communications tool was that not all of the district's personnel used their computers. System-wide strategies to move teachers and administrators past this stage included checking for connectivity problems, buying a full complement of computers for all teachers in all buildings, standardizing and minimizing the routine needed to access FirstClass, problem-solving with building-level teachers and student technical support, and checks of system logons to identify non-adopters.

Play and Interpersonal Use Stage

This stage is characterized by teachers and administrators who were comfortable with each other exchanging non-substantive e-mail and using the FirstClass "Chat" feature to converse online about non-substantive matters. Others reported using Internet e-mail to contact relatives, especially children at college. In contrast, non-users tended not to play even when they understood that they could access the system and were seemingly cognizant that the network had "Play Potential." The common reason cited for not "Playing" was that they did not have time to to do so. System-wide strategies to move teachers and administrators past this stage included invitations to work with trusted, but more advanced, colleagues after school or on weekends, to take summer Playshops, or have a Tech Squad student privately mentor them.

Building and District Information Stage

This stage is characterized by the building administrator endorsing and using telecommunity as a management system. Adopter administrators actively modeled the use of the network and invited office staff and Teacher Leaders to imagine and implement FirstClass as a building communication and management tool. In contrast, non-user administrators did not actively model the system and they tended to rely on conventional communication systems like announcements, faculty meetings, newsletters, daily bulletins, and classroom visits. While FirstClass conference environments emerged in the developmentally advanced buildings, the conference environment and file accumulation within conferences remained minimal or nonexistent in the buildings of non-adopting administrators. System-wide strategies to move administrators and teachers past this stage included creating online building conferences, suggesting to office staff and administrators how FirstClass telecommunications software could facilitate office tasks, training individual secretaries on ClarisWorks to create daily bulletins and newsletters, and regularly reporting on advanced applications in other buildings.

Individual and Team Instructional Stage

This stage is characterized by individual teachers or small teams of teachers at the same grade level or content area combining energies and technology skills to improve or develop instructional activities. Non-user teachers chose not to team with adopters, elected not to participate in immersion or individual training sessions, and were not drawn to self-directed, discovery, or simulation-type professional development sessions. The main system-wide strategy used to move administrators and teachers past this stage was the two summer "Playshops" organized so teachers could work in teams within their own buildings and classrooms. Data from teachers' daily journals and an exit survey suggested that the design of the Playshops complemented self-directed and discovery learning styles and created advanced Teacher Leaders for colleague mentoring in technology use. Teachers who did not enjoy these approaches to learning received whole group, professionally led, hands-on skill training that targeted specific computer applications. The combination of these two approaches appears to have significantly advanced the overall skills of the project's teachers and consequently increased their capacity to serve as resources for preservice and student teachers.

Projects and Initiatives Management Stage

This stage is characterized by the use of SchoolNet resources and the conference feature of FirstClass to manage projects, grants, and initiatives that emerged as the school year unfolded. Grants managed in this fashion appeared to flourish whereas non-user teachers and administrators who continued to rely on frequent committee meetings showed limited productivity. Moreover, while FirstClass conference folders were often created for projects, if the project director did not utilize the network infrastructure and software features, the project participants were not inclined to do so either. System-wide strategies to move administrators and teachers past this stage included e-mail reminders on the effectiveness of FirstClass, meetings with project directors to encourage its adoption, and designing functional project desktops on FirstClass. These efforts, however, were mostly to no avail.

Interorganizational Communications Stage

This stage is characterized by communications between pairs of teachers or administrators between the Talawanda and Tri-Village school districts. Adopting building administrators and teachers have been capable of using the FirstClass network at this level but it remains the most undeveloped of the stages with the fewest examples of productive outcomes. One reason for this is that many teachers and administrators were very sensitive to online remarks made early in the partnership. While the connection between with Miami University and the two school districts is maturing at an advanced rate, interdistrict collaboration is almost nonexistent to date. Speculation that face-to-face contact is a prerequisite for extended network collaboration remains supported.

Conclusion

The *Partners In Learning*/SchoolNet Prototype in the Talawanda City Schools, Tri-Village Local Schools, and Miami University is positioned to advance and offer developmental insight on teacher and administrator network, telecommunity, and curriculum development as well as education technology adoption. Outcomes to date suggest that near and distanced telecommunities, properly installed and professionally developed, can have a transformative impact on the culture of teaching and learning and serve as a critical component of a K-16 approach to the adoption of education technology.

References

Sandholtz, J. H., Ringstaff, C., & Dwyer, D. C. (1997). *Teaching with technology: Creating student-centered classrooms.* New York: Teachers College Press.

U.S. Congress, Office of Technology Assessment. (1995). *Teachers and technology: Making the connection.* Washington, D C: U.S. Government Printing Office.

J. Kevin Maney is Assistant Professor of Education Technology in the Department of Teacher Education, 301 McGuffey Hall, Miami University, Oxford, Ohio 45056. Office Phone: 513 529-3739. Office FAX: 513 529-4931. E-mail: maneyjk@muohio.edu

Douglas M. Brooks is Professor of Education in the Department of Teacher Education, 301 McGuffey Hall, Miami University, Oxford, Ohio 45056. Office Phone: 513 529-6448. Office FAX: 513 529-4931. E-mail: brooksdm@muohio.edu

Bruce E Perry is Associate Dean in the School of Education and Allied Professions, 200 McGuffey Hall, Miami University, Oxford, Ohio 45056. Office Phone: 513 529-6418. Office FAX: 513 529-7270. E-mail: perrybe@muohio.edu